Holland's Landmark PPP High-Speed Rail Project

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Faster rail connections to London, Paris and Brussels will be achieved when The Netherlands' $2.6 billion first high-speed rail project is completed in 2007. The 185-miles-per-hour train service will operate on the new HSL-Zuid rail route, forming part of the Trans-European rail network. Approximately 60 miles long, the system will run from Hoofddorp, in the north of Holland, via Amsterdam-Schiphol and Rotterdam to the southern border with Belgium.

This landmark project achieves a number of firsts before it is even completed. The project is the largest public-private partnership (PPP) project ever awarded by the Dutch government to a private party, and the largest PPP high-speed rail project in Europe. It is also an important project to the Dutch people, providing better services for the estimated 15 million passengers—both domestic and international, that will travel the route, as well as relieving constraints on existing infrastructure, both road and air.

Project Overview

A large and complex project, HSL-Zuid can be subdivided into three major segments: the Substructure, the Infrastructure Provider Project and the Train Operating Service.

The Dutch government took an unusual procurement approach when awarding the **Substructure** contract in mid-2000. In an effort to 'fast track' the work, the government divided the contract into seven packages with civil contractors responsible for the design of their respective portion of the project. These civil works contracts are managed directly by the Dutch State's project company, Projectorganisatie HogeSnelheidslijn-Zuid (HSL-Zuid).

The civil contractors are facing some interesting challenges with tunnelling technology being stretched to new limits. The world's biggest cutting head at 14.87 metres in diameter has been used to build the eight-kilometre Green Heart tunnel. Much of the track will rest on piled concrete slab (settlement-free plates) instead of conventional embankments and viaducts. The railroad's biggest bridge has twelve 105-metre spans with a continuous single-trough deck, topped with a 14-metre-wide composite concrete slab.

The **Train Operating Franchise** contract for the HSL-Zuid route has been awarded to a partnership (called HSA or High Speed Alliance) between the Dutch National Rail, Nederlandse Spoorwegen, and the airline carrier, Royal Dutch Airlines KLM. The 15-year contract will include domestic services between Amsterdam, Schiphol, Rotterdam, The Hague and Breda, as well as international services towards Brussels and Paris.

In the face of strong industry competition, the **Infrastructure Provider Project** was awarded in June 2001 to the Infraspeed Consortium. Infraspeed is responsible for the design, build, financing, availability and maintenance of the HSL-Zuid superstructure for a concession period of 25-years, in addition to a five-year construction period. The contract value is $ 2.6 billion. The project includes responsibility for managing all system elements, which include signalling systems, traction power supply, command and control systems, ancillary equipment and telecommunications, rail track and noise barriers, as well as right-of-way fencing where required for safety purposes. Infraspeed will also be responsible for the maintenance of all underlying civil works upon their acceptance by the state. The members of Infraspeed are Fluor Infrastructure, Siemens Nederland, Royal BAM Group, Innisfree and HSBC Infrastructure.

Programme Management

A key element to the success of the project will be the implementation of best practices from the industry's most significant projects. Fluor is the programme manager for the design, build and operation of the HSL-Zuid PPP project and also acts as consortium leader. Fluor is an industry leader with demonstrated expertise in executing complex, capital projects around the world. As well as a significant track record of successfully delivering PPP projects, the company and its consortium partners have had an established presence in the Netherlands for more than 40-years. An intimate knowledge of the political, cultural and business environments in The Netherlands was essential in developing the project.

The HSL-Zuid project is currently on schedule for trains to start running in the southern section of the system beginning in October 2006 with the remainder of the route operating in April 2007.

The rail infrastructure is being designed and built to meet the strict environmental and planning procedures required under Dutch law. In addition, safety requirements were fundamentally important to the development of design specifications for the new rail route. The route encompasses innovative systems technology, four tunnels, an aquaduct, bridge and connections at five major interfaces.

An important part of the programme management role is the coordination of the myriad tasks, complex logistics and variables that constitute a project of this magnitude. In addition, communications with the numerous public entities and communities along the route is essential.

Interface Challenges

"Managing the interface between the civil contractor packages and the infrastructure project has been our biggest challenge," says David Gedney, chief executive of Infraspeed. The seven civil contracts must be complete before Gedney's workers can begin work on the system assets for the route to be complete by 2007.

Another major challenge has been that the civil contracts were awarded from late 1999 and that the reference designs by the civil contractors formed the basis of Infraspeed's bid in January 2001. While Infraspeed prepared its bid, civil teams continued to refine their designs. "When we got on board, we had to go back and take a look at designs as they were being executed. We found some pretty important changes," adds Gedney.

"Tensions between the bulk civil engineering work and the following fit-out stem from the contractual separation of those intimately linked pieces of railroad," suggests Bart-Jan Kouwenhoven, until recently the client's Infraprovider contract manager of the HSL-Zuid project organisation. "Given a second chance, all construction would have been integrated in separate packages along the route," says Kouwenhoven.

Why Public Private Partnership?

A PPP is a method of procurement that brings together the public and private sectors in a long-term partnership for a common purpose and mutual benefit. Part of the reason for the success of PPPs in building major infrastructure projects in Europe and around the world is that construction is more likely to be completed on time and to budget, reducing the pressure on public finances whilst providing essential public services such as transport systems. For example, in the United Kingdom, the Underground's Jubilee Line Extension was conceived as a £2 billion project built by public money, cost the taxpayer an extra £1.5 billion and opened nearly two years late. By contrast, the London Docklands Light Railway Extension was executed through a PPP and was built on budget and ahead of schedule.

The Dutch Ministry of Transport, Public Works and Water Management selected a PPP approach for the HSL-Zuid Infrastructure Provider Project to secure added value and life-cycle efficiencies. The Dutch government also needed a service provider with the right mixture of project management, systems integration, railway engineering and civil works capabilities. These expertise and skills are essential in delivering this important national project on time with high levels of availability on the rail route over several decades.

A PPP contract involves a number of advisors, bankers, contractors, facility managers, consultants and developers both to execute the work as well as to provide assurance to public and private stakeholders. As illustrated in the following organisation chart for the Infrastructure Provider contract, a project of this magnitude brings together a wide range of expertise.

Risk Transfer

One of the major benefits of a PPP contract is that risk is shared by the private sector, bringing cost efficiencies and providing for contractual incentives. This was a key element of the contract for the Dutch government. There was a transparent and genuine risk transfer to the private sector whilst a competitive Net Present Value was achieved over the performance-related payments. Once constructed and made available for train operations, Infraspeed's annual performance fee will be approximately $100 million. This

performance-based fee will reward the consortium for maintaining the system at a high degree of availability for 25-years. The fee will be reduced if availability is compromised by unplanned maintenance or other operating issues. It is, therefore, a critical factor that the consortium has the financial resources to take financial responsibility if there are problems.

Life-cycle approach

Incorporating maintenance and operations responsibility into the PPP contract ensures that the private sector is not focused on the short-term successful delivery of the project. The team also has to design in operability and maintainability of the system to ensure optimum performance over a long period of time, including renewals plans – based on detailed reliability, availability and maintainability (RAM) analyses.

Long-term relationships

One of the major differences from normal design-build projects is the investment that has to be made to establish the long-term relationships that will be essential to perform the contract over its lifetime. An effective partnership is built on a collaborative process with a willingness to learn from each other.

European deal of the year

The €1.3 billion engineering, procurement, construction and financing for the systems assets reached financial close at the end of 2001. The success of that financing resulted in an award as European PPP Deal of the Year by *Project Finance* magazine and European Transport Deal of the Year by *Euromoney* magazine. The deal's strength was underpinned by innovative European Investment Bank-backed financing, unprecedented state-government support, as well as the commitment from the members of the Infraspeed consortium—all of which created a particularly attractive risk profile.

The fast-track schedule of the tender process and financial closure was agreed upon and developed by the Dutch government, the HSL-Zuid Infraprovider Project organisation and the Infraspeed consortium. It took two months from the submission of best-and-final offer to signing the memorandum of understanding between parties, with financial close achieved five months later.

An attractive financing arrangement was achieved by:

- Placing risk with the parties best able to manage them
- Using the strong balance sheets and reputations of the consortium partners
- Creating financing stability and spreading risk by bringing together a number of international banks
- Involving the European Investment Bank
- Working with the government as a partner, taking risk in those areas that it is best able to control and guaranteeing payment upon performance

The Dutch state emphasized several prerequisites for viable financial structures as part of the tender proposal. Among them, the solution should allow the state to receive continuous service over a 25-year period upon reaching availability of train operations.

How the deal was financed

Financing for the HSL-Zuid PPP project, which was based on a fairly typical private-finance initiative/PPP-type structure, (i.e. a small amount of base equity with the majority of the sponsors' contribution being injected via subordinated debt as well as the use of an equity bridge facility) was as follows:

Commercial loan facility	€605 million
European Investment Bank loan facility	€400 million
Working capital facility	€15 million
Sponsors equity and subordinated loan	€120 million
Cash flow during construction	€87 million

The commercial loan facility has maturity of 27-years with a grace period of six months. This loan carries a hedged interest rate during construction only, and thereafter, the interest rate risk lies with the state.

The involvement of the European Investment Bank in this transaction demonstrates its willingness to be a leading financier and supporter of European transport projects. The structure of the loan is similar to that of the commercial debt facility; however, the loan drawdown and repayments are fixed at financial close in exchange for fixing the loan interest rate for the whole term. The EIB facility is guaranteed by an EIB Guarantee Facility of €460 million, supported by the commercial banks.

The HSL–Zuid PPP is expected to achieve a 5% cost reduction compared with pure state funding. The relative cost savings achieved, therefore, will be crucial to demonstrating the success of one PPP model for future works in The Netherlands.